27

uitous 1 or 2), SAGE (sarcoma antigen), SART-1 or SART-3

entially expressed antigen of melanoma), PSA (prostate-specific antigen), PSM (prostate-specific membrane antigen), RAGE (renal antigen), RU1 or RU2 (renal ubiq-

SEQUENCE LISTING

28 stomary practice

known or customary practice within the art to which the invention pertains and as may be applied to the essential features hereinbefore set forth and as follows in the scope of the appended claims.

```
<160> NUMBER OF SEQ ID NOS: 3
<210> SEQ ID NO 1
<211> LENGTH: 9
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
<400> SEOUENCE: 1
Tyr Arg Gln Phe Val Thr Gly Phe Trp
<210> SEQ ID NO 2
<211> LENGTH: 9
<212> TYPE: PRT
<213> ORGANISM: J404phage
<400> SEQUENCE: 2
Trp Glu Asn Trp Met Met Gly Asn Ala
<210> SEQ ID NO 3
<211> LENGTH: 12
<212> TYPE: PRT
<213> ORGANISM: J404phage
<400> SEQUENCE: 3
Phe Asp Thr Gly Ala Phe Asp Pro Asp Trp Pro Ala
                 5
                                     10
```

(squamous antigen rejecting tumor 1 or 3), TEL/AML1 (translocation Ets-family leukemia/acute myeloid leukemia 1), TPI/m (triosephosphate isomerase mutated), TRP-1 (tyrosinase related protein 1, or gp75), TRP-2 (tyrosinase related protein 2), TRP-2/INT2 (TRP-2/intron 2), WT1 (Wilms' tumor gene). These antigens are disclosed in references that are cited in Renkvist, et al., "A Listing of Human Tumor Antigens Recognized by T Cells," *Cancer Immunology Immunotherapy* 50:3-15 (2001), which is hereby incorporated by reference in its entirety. The cited references may be consulted for methods of isolating the specific antigens or genes encoding the specific antigens for use in the vaccines of the invention.

Such nanoparticle vaccine formulations would contain an appropriate amount of cytokine and/or tumor antigen that is optimized to produce the desired response against a given cancerous condition.

The foregoing detailed description has been given for clearness of understanding only and no unnecessary limitations should be understood there from as modifications will be obvious to those skilled in the art. While the invention has been described in connection with specific embodiments thereof, it will be understood that it is capable of further modifications and this application is intended to cover any variations, uses, or adaptations of the invention following, in general, the principles of the invention and including such departures from the present disclosure as come within

What is claimed:

40

- 1. A conjugated system comprising:
- polymerized liposomes produced from lipid monomers which do not contain phosphate groups and which are cross-linkable and
- an antigen conjugated to the polymerized liposomes so that the antigen is surface exposed on the polymerized liposomes, wherein the antigen elicits an immune response.
- 2. The conjugated system according to claim 1, wherein the lipid monomers are selected from the group consisting of fatty acids containing 8-30 carbon atoms in a saturated, monosaturated, or multiply unsaturated form; acylated derivatives of polyamino, polyhydroxy, or mixed aminohydroxy compounds; glycosylacylglycerols; sphingolipids; steroids; terpenes; prostaglandins; non-saponified lipids; and mixtures thereof.
- 3. The conjugated system according to claim 1, wherein the lipid monomers are diacetylene containing compounds.
- 4. The conjugated system according to claim 1, wherein the antigen is derived from pathogenic bacterial, fungal or viral organisms, *Streptococcus* species, *Candida* species, *Brucella* species, *Salmonella* species, *Shigella* species, *Pseudomonas* species, *Bordetella* species, *Clostridium* species, Norwalk virus, *Bacillus anthracis*, *Mycobacterium tuberculosis*, human immunodeficiency virus (HIV),